REMARKS

Claims 22 and 24-42 are pending in the above-captioned application. Claims 22 and 24-42 remain rejected under 35 U.S.C. §103(a) as being unpatentable over Yoo et al., U.S. Patent No. 6,309,591 in view of Harada et al, U.S. patent No. 6,432,158.

In previous responses filed in response to Office Actions for the above-captioned application, it has been pointed out that the apparatus of Yoo et al., with its variable speed D.C. motor, pulley, and rotating plunger, would result in the application of shear during its processing. Accordingly, the apparatus of Yoo et al. could not be used to form or shape a mixture of carbon fibers and matrix material into a carbon/carbon composite material, as the of Yoo et al. would lead to rupture of carbon fibers through the application of shear. Indeed, Yoo et al. even identifies shear (resulting from the rotating plunger, pulley, D.C. motor components) as causing the "deformation of the powder particles, [and] de-agglomeration of the particles" (Yoo et al., col. 4, lines 62-65) which would also rupture carbon fibers.

This is more than simply intended use, as argued in the outstanding Office Action, since the use of a rotating plunger would cause shear forces at any speed. In order to further distinguish the claims of the above-captioned application from the shear-producing apparatus of Yoo et al., independent claims 22, 30 and 39 have been amended to specify that the means for applying pressure functions to apply pressure uniformly to all parts of the material in the cavity of Applicants' apparatus. As such, the claimed apparatus is clearly distinguished from the

rotating plunger of Yoo et al. since it specifically avoids the application of shear. Support for these amendments appears in the specification at, e.g., paragraph [00023]. Thus, since as explained above and in the prior responses, the Yoo et al. apparatus is different from that of the above-captioned application, and not suitable for use with carbon fiber-containing materials, the claims of the above-captioned application are patentably distinguished from Yoo et al., even if combined with Harada et al.

The above-captioned application relates to an apparatus for forming composites which can be used for friction bearing or structural applications, and utilizes carbon fibers. The invention of the above-captioned application utilizes pistons which apply pressure uniformly to all parts of the material in order to avoid shearing of the carbon fibers, and is different from the disclosure of Yoo et al., which uses a rotating plunger. Specifically, the hot press of the above-captioned application does not include equipment to rotate the pistons, as rotation of the pistons would shear carbon fibers included within the fiber and matrix material.

Accordingly, Applicant believes that all of the pending claims are now in condition for allowance and respectfully requests a favorable action to that effect.

While this application is under final rejection, entry of the amendments made herein is respectfully requested, as they are believed to place all claims in condition for allowance.

CONCLUSION

Based on the foregoing amendments and remarks, it is believed that all claims 22 and 24-42 are in condition for allowance. Such action is earnestly sought. If there remains any matter which prevents the allowance of any of the pending claims, the Examiner is requested to call the undersigned collect at 615.242.2400 to arrange for an interview which may expedite prosecution.

Respectfully submitted,

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CERTIFICATE OF ELECTRONIC TRANSMITTAL

I hereby certify that this Response to Office Action for Application No. 10/760,946, filed on January 20, 2004, is being transmitted electronically to:

Mail Stop Amendment
Commissioner for Patents
Art Unit: 1722
Examiner: Thukhanh T. Nguyen

on November 21, 2007.

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